

PHARMACEUTICAL COMPOSITIONS OF FLURBIPROFEN AND BURN-MASKING AGENT FOR TREATING SORE THROAT

The present invention relates to new pharmaceutical compositions containing the non-steroidal anti-inflammatory drug flurbiprofen which also has analgesic and antipyretic activity. The invention also relates to the use of these new pharmaceutical compositions in the treatment of the symptoms of colds and flu, particularly sore throat. The flurbiprofen molecule exists in two enantiomeric forms and the term flurbiprofen as used herein is intended to embrace the individual enantiomers and mixtures thereof in any proportion including a 1:1 mixture which is herein referred to as the racemic form.

Flurbiprofen can exist in the form of pharmaceutically acceptable salts or in the form of derivatives such as esters and such salts or esters are embraced by the term flurbiprofen as used herein.

Flurbiprofen would be expected to cause an unpleasant burning sensation at the back of the mouth when retained in the mouth. This would clearly be unacceptable to the patient being treated. The present applicants have surprisingly found that an unacceptable burning sensation is not experienced when the pharmaceutical compositions of the present invention are used to treat the symptoms of colds and flu, particularly sore throat, but that the patient does receive relief of the symptoms of the cold or flu eg sore throat.

A first aspect of the present invention provides pharmaceutical compositions comprising a combination of a therapeutically effective amount of flurbiprofen with a therapeutically effective amount of one or more active ingredients selected from an antihistamine, a cough suppressant, a decongestant, an expectorant, a muscle relaxant, a centrally acting analgesic, a local anaesthetic, an antibacterial compound, an antiviral compound, an

A suitable antibiotic is metronidazole.

Suitable antifungal compounds include nystatin, amphotericin, imidazoles such as miconazole and triazoles such as fluconazole.

Suitable minerals include zinc and selenium salts.

- 5 Suitable vitamins include vitamins A, C, D, E and K, sodium ascorbate, riboflavine and thiamine hydrochloride.

 The above mentioned active ingredients are well known in the field of pharmacy and the dose of each to be given can be found from standard reference books. See for example Martindale The Extra Pharmacopoeia 29th
10 Edition published by The Pharmaceutical Press the disclosure of which is herein incorporated by reference.

 A further aspect of the present invention provides pharmaceutical compositions comprising a combination of a therapeutically effective amount of flurbiprofen with a burn-masking amount of an agent which has a warming
15 effect on the mucosa of the throat in the form of a masticable or suckable solid dosage form or a liquid or a spray. Suitable warming agents include ginger, chilli and agents containing or consisting of anethole.

 Anethole (1-methoxy-4-(1-propenyl)benzene or p-propenylanisole) is found naturally as the chief constituent of anise oil, star anise oil and fennel
20 oil. It can be incorporated into the compositions in the present invention in substantially pure form, produced either by extraction from the above oils or synthetically, or it may be incorporated as one of the above oils. The amount of anethole should be such that the required amount of taste masking is obtained.

The invention will be illustrated by the following Examples which are given by way of example only. The component identified in Examples 1 to 3 as "Active ingredient" can be any one or more of the active ingredients selected from an antihistamine, a cough suppressant, a decongestant, an expectorant, a muscle relaxant, a centrally acting analgesic, a local anaesthetic, an antibacterial compound, an antibiotic compound, an antifungal compound, an antiviral compound, minerals and vitamins. Particularly preferred active ingredients are any one or more of the compounds specifically identified hereinbefore.

Example 1

Lozenges are prepared containing the following ingredients expressed as the weight in milligrammes per lozenge.

	Racemic flurbiprofen	8.75
15	Calcium Carbonate	7.5
	Active ingredient	q.v.
	Solids from a 1:1 mixture of sugar	to
	and liquid glucose	2350

The mixture of the sugar and liquid glucose is heated to 140° and a vacuum applied to reduce the water content of the mixture. The flavouring is added in a sealed vessel. The flurbiprofen, the active ingredient and the calcium carbonate are blended and the blend added to the remainder of the ingredients. The resulting mixture is cooled and formed into a continuous cylindrical mass from which the individual lozenges are formed. The individual solid lozenges are visually inspected and then packed.

The resulting lozenges provide palatable, stable and effective treatment for the symptoms of colds and flu particularly including sore throats.

and formed into a continuous cylindrical mass from which individual lozenges are prepared.

The effectiveness of the treatment can be demonstrated by means of clinical trials in which patients suffering from sore throats are administered the formulations described in any one of the Examples or a placebo. The patient is asked to assess the effectiveness of the treatment on parameters such as the relief of the pain associated with the sore throat, the reduction in the swelling of the throat and/or the improvement in swallowing following treatment. The patients are also examined by a clinician to determine the amount of tonsillopharyngitis.

Claims

1. A pharmaceutical composition comprising a combination of a therapeutically effective amount of flurbiprofen with (a) a therapeutically effective amount of one or more active ingredients selected from an antihistamine, a cough suppressant, a decongestant, an expectorant, a muscle relaxant, a centrally acting analgesic, a local anaesthetic, an antibacterial compound, an antiviral compound, an antibiotic compound, an antifungal compound, minerals and vitamins and/or (b) a burn-masking amount of an agent which has a warming effect on the mucosa of the throat said composition being in the form of a masticable or suckable solid dosage form or a liquid or a spray.
2. The use of a combination of a therapeutically effective amount of flurbiprofen with (a) a therapeutically effective amount of one or more active ingredients selected from an antihistamine, a cough suppressant, a decongestant, an expectorant, a muscle relaxant, a centrally acting analgesic, a local anaesthetic, an antibacterial compound, an antiviral compound, an antibiotic compound, an antifungal compound, minerals and vitamins and/or (b) a burn-masking amount of an agent which has a warming effect on the mucosa of the throat for the preparation of a medicament in the form of a masticable or suckable solid dosage form or a liquid or spray intended to release the flurbiprofen in the oral cavity so as to deliver the flurbiprofen to the surface of the throat for the treatment of sore throat.
3. A method of treating a sore throat comprising the administration of a pharmaceutical composition in the form of a masticable or suckable solid dosage form or a liquid or spray, said pharmaceutical composition comprising a combination of a therapeutically effective amount of flurbiprofen with (a) a therapeutically effective amount of one or more active

the mineral is selected from zinc and selenium salts; and
the vitamin is selected from vitamins A, C, D, E and K, sodium ascorbate, riboflavine and thiamine hydrochloride.

5. A composition, use or method as claimed in any preceding claim in
5 which the warming agent contains or consists of anethole.

6. A composition, use or method as claimed in any preceding claim
wherein the amount of flurbiprofen is from 2.5 to 20 mg per unit dose.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 98/03180

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>MIRA E. ET AL: "Treatment of pharyngitis and pharyngolaryngitis. Comparison of phenylprenazone and flurbiprofen administered orally and rectally" CLIN. TRIALS J., vol. 21, no. 2, 1984, pages 100-108, XP002078979 see page 103</p> <p>-----</p>	1

